Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB39-5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters: ABI	AF	ABS_d	GI	Toxicity Parameters: RfD_o	CPF_o	Current Condition: HQ	RISK	Pass or Fail?	Adjusted Condition: Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	36.6	1	0.2	0.03	0.8	5.7		8.7E-05			6.56E+01	1.56E-04		
AL_EC >8-10	46.2	1	0.2	0.03	0.8	0.03		2.08E-02			8.28E+01	3.73E-02		
AL_EC >10-12	200	1	0.2	0.03	0.8	0.03		9.02E-02			3.58E+02	1.62E-01		
AL_EC >12-16	510	1	0.2	0.1	0.5	0.03		3.06E-01			9.14E+02	5.48E-01		
AL_EC >16-21	270	1	0.2	0.1	0.5	2		2.43E-03			4.84E+02	4.35E-03		
AL_EC >21-34	32	1	0.2	0.1	0.5	2		2.88E-04			5.73E+01	5.16E-04		
AR_EC >8-10	34.87	1	0.2	0.03	0.8	0.05		9.44E-03			6.25E+01	1.69E-02		
AR_EC >10-12	16.6	1	0.2	0.03	0.8	0.05		4.49E-03			2.97E+01	8.05E-03		
AR_EC >12-16	89	1	0.2	0.1	0.5	0.05		3.20E-02			1.59E+02	5.74E-02		
AR_EC >16-21	129.969	1	0.2	0.1	0.5	0.03		7.80E-02			2.33E+02	1.40E-01		
AR_EC >21-34	19.9984	1	0.2	0.1	0.5	0.03		1.20E-02			3.58E+01	2.15E-02		
Benzene	0.071	1	0.2	0.0005	0.95	0.003	0.055	2.96E-04	3.91E-09		1.27E-01	5.31E-04	7.01E-09	
Toluene	0.154	1	0.2	0.03	1	0.2		1.03E-05			2.76E-01	1.84E-05		
Ethylbenzene	0.48	1	0.2	0.03	0.92	0.1		6.43E-05			8.60E-01	1.15E-04		
Total Xylenes	0.45	1	0.2	0.03	0.9	2		3.02E-06			8.06E-01	5.41E-06		
Total Naphthalenes	0.4	1	0.2	0.13	0.89	0.02		3.30E-04			7.17E-01	5.92E-04		
n-Hexane	6.9	1	0.2	0.03	0.8	0.06		1.56E-03			1.24E+01	2.79E-03		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		1.79E-03	8.08E-07	1.77E-10	
Benzo(a)anthracene	0.008	1	0.2	0.13	0.89		0.73		7.72E-09	*for*	1.43E-02		1.38E-08	*for*
Benzo(b)fluoranthene	0.006	1	0.2	0.13	0.89		0.73		5.79E-09	*all*	1.08E-02		1.04E-08	*all*
Benzo(k)fluoranthene	0.002	1	0.2	0.13	0.89		0.73		1.93E-09	*cPAHs*	3.58E-03		3.46E-09	*cPAHs*
Benzo(a)pyrene	0.002	1	0.2	0.13	0.89		7.3		1.93E-08		3.58E-03		3.46E-08	
Chrysene	0.013	1	0.2	0.13	0.89		0.073		1.25E-09		2.33E-02		2.25E-09	
Dibenzo(a,h)anthracene	0.001	1	0.2	0.13	0.89		2.92		3.86E-09		1.79E-03		6.91E-09	
Indeno(1,2,3-cd)pyrene	0.0006	1	0.2	0.13	0.89		0.73		5.79E-10		1.08E-03		1.04E-09	
Sum	**1393.726**							5.58E-01	4.44E-08		2.50E+03	1.00E+00	7.96E-08	

Current Condition

TPH, mg/kg= 1393.726
HI= 5.581E-01
Cancer RISK= 4.442E-08
Pass or Fail? Pass
Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 2497.442
HI= 1.000E+00
Cancer RISK= 7.960E-08
Pass or Fail? Pass
Check Residual Saturation (WAC340-747(10))

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

MTCATPH Worksheets

TPH @ Total Risk = 1×10^{-5}

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB2-6.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	37.6	1	0.2	0.03	0.8	5.7		8.9E-05			1.85E+04	4.40E-02		
AL_EC >8-10	59.9	1	0.2	0.03	0.8	0.03		2.70E-02			2.95E+04	1.33E+01		
AL_EC >10-12	170	1	0.2	0.03	0.8	0.03		7.67E-02			8.38E+04	3.78E+01		
AL_EC >12-16	470	1	0.2	0.1	0.5	0.03		2.82E-01			2.32E+05	1.39E+02		
AL_EC >16-21	280	1	0.2	0.1	0.5	2		2.52E-03			1.38E+05	1.24E+00		
AL_EC >21-34	25	1	0.2	0.1	0.5	2		2.25E-04			1.23E+04	1.11E-01		
AR_EC >8-10	52.28	1	0.2	0.03	0.8	0.05		1.41E-02			2.58E+04	6.97E+00		
AR_EC >10-12	6.699	1	0.2	0.03	0.8	0.05		1.81E-03			3.30E+03	8.94E-01		
AR_EC >12-16	44	1	0.2	0.1	0.5	0.05		1.58E-02			2.17E+04	7.81E+00		
AR_EC >16-21	93.9948	1	0.2	0.1	0.5	0.03		5.64E-02			4.63E+04	2.78E+01		
AR_EC >21-34	9.7994	1	0.2	0.1	0.5	0.03		5.88E-03			4.83E+03	2.90E+00		
Benzene	0.265	1	0.2	0.0005	0.95	0.003	0.055	1.11E-03	1.46E-08		1.31E+02	5.45E-01	7.19E-06	Fail
Toluene	0.32	1	0.2	0.03	1	0.2		2.13E-05			1.58E+02	1.05E-02		
Ethylbenzene	2.67	1	0.2	0.03	0.92	0.1		3.58E-04			1.32E+03	1.76E-01		
Total Xylenes	0.35	1	0.2	0.03	0.9	2		2.35E-06			1.73E+02	1.16E-03		
Total Naphthalenes	0.001	1	0.2	0.13	0.89	0.02		8.26E-07			4.93E-01	4.07E-04		
n-Hexane	1.4	1	0.2	0.03	0.8	0.06		3.16E-04			6.90E+02	1.56E-01		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		4.93E-01	2.22E-04	4.86E-08	
Benzo(a)anthracene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*for*	1.48E-01		1.43E-07	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	1.48E-01		1.43E-07	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	1.48E-01		1.43E-07	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		1.48E-01		1.43E-06	
Chrysene	0.004	1	0.2	0.13	0.89		0.073		3.86E-10		1.97E+00		1.90E-07	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		1.48E-01		5.71E-07	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		1.48E-01		1.43E-07	
Sum	**1254.286**							4.84E-01	2.03E-08		6.18E+05	2.39E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 1254.286
HI= 4.844E-01
Cancer RISK= 2.028E-08
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 618332.608
HI= 2.388E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB6-7

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	11	1	0.2	0.03	0.8	5.7		2.6E-05			3.79E+03	9.00E-03		
AL_EC >8-10	27.9	1	0.2	0.03	0.8	0.03		1.26E-02			9.62E+03	4.34E+00		
AL_EC >10-12	92	1	0.2	0.03	0.8	0.03		4.15E-02			3.17E+04	1.43E+01		
AL_EC >12-16	320	1	0.2	0.1	0.5	0.03		1.92E-01			1.10E+05	6.62E+01		
AL_EC >16-21	220	1	0.2	0.1	0.5	2		1.98E-03			7.58E+04	6.82E-01		
AL_EC >21-34	28	1	0.2	0.1	0.5	2		2.52E-04			9.65E+03	8.69E-02		
AR_EC >8-10	25.3	1	0.2	0.03	0.8	0.05		6.85E-03			8.72E+03	2.36E+00		
AR_EC >10-12	4.1	1	0.2	0.03	0.8	0.05		1.11E-03			1.41E+03	3.82E-01		
AR_EC >12-16	34	1	0.2	0.1	0.5	0.05		1.22E-02			1.17E+04	4.22E+00		
AR_EC >16-21	73.9928	1	0.2	0.1	0.5	0.03		4.44E-02			2.55E+04	1.53E+01		
AR_EC >21-34	11.9994	1	0.2	0.1	0.5	0.03		7.20E-03			4.14E+03	2.48E+00		
Benzene	0.42	1	0.2	0.0005	0.95	0.003	0.055	1.75E-03	2.31E-08		1.45E+02	6.04E-01	7.97E-06	Fail
Toluene	0.163	1	0.2	0.03	1	0.2		1.09E-05			5.62E+01	3.74E-03		
Ethylbenzene	5.9	1	0.2	0.03	0.92	0.1		7.90E-04			2.03E+03	2.72E-01		
Total Xylenes	1.7	1	0.2	0.03	0.9	2		1.14E-05			5.86E+02	3.93E-03		
Total Naphthalenes	1.7	1	0.2	0.13	0.89	0.02		1.40E-03			5.86E+02	4.84E-01		
n-Hexane	6.4	1	0.2	0.03	0.8	0.06		1.44E-03			2.21E+03	4.97E-01		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		3.45E-01	1.55E-04	3.40E-08	
Benzo(a)anthracene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*for*	1.03E-01		9.97E-08	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	1.03E-01		9.97E-08	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	1.03E-01		9.97E-08	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		1.03E-01		9.97E-07	
Chrysene	0.006	1	0.2	0.13	0.89		0.073		5.79E-10		2.07E+00		1.99E-07	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		1.03E-01		3.99E-07	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		1.03E-01		9.97E-08	
Sum	**864.584**							3.26E-01	2.90E-08		2.98E+05	1.12E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 864.584
HI= 3.255E-01
Cancer RISK= 2.901E-08
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 298001.288
HI= 1.122E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB11-3.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	41.1	1	0.2	0.03	0.8	5.7		9.8E-05			2.24E+04	5.31E-02		
AL_EC >8-10	48.7	1	0.2	0.03	0.8	0.03		2.20E-02			2.65E+04	1.20E+01		
AL_EC >10-12	150	1	0.2	0.03	0.8	0.03		6.77E-02			8.17E+04	3.68E+01		
AL_EC >12-16	450	1	0.2	0.1	0.5	0.03		2.70E-01			2.45E+05	1.47E+02		
AL_EC >16-21	330	1	0.2	0.1	0.5	2		2.97E-03			1.80E+05	1.62E+00		
AL_EC >21-34	33	1	0.2	0.1	0.5	2		2.97E-04			1.80E+04	1.62E-01		
AR_EC >8-10	62.5	1	0.2	0.03	0.8	0.05		1.69E-02			3.40E+04	9.21E+00		
AR_EC >10-12	5	1	0.2	0.03	0.8	0.05		1.35E-03			2.72E+03	7.37E-01		
AR_EC >12-16	67	1	0.2	0.1	0.5	0.05		2.41E-02			3.65E+04	1.31E+01		
AR_EC >16-21	99.9881	1	0.2	0.1	0.5	0.03		6.00E-02			5.45E+04	3.27E+01		
AR_EC >21-34	11.9994	1	0.2	0.1	0.5	0.03		7.20E-03			6.54E+03	3.92E+00		
Benzene	0.16	1	0.2	0.0005	0.95	0.003	0.055	6.67E-04	8.81E-09		8.71E+01	3.63E-01	4.80E-06	Fail
Toluene	0.328	1	0.2	0.03	1	0.2		2.19E-05			1.79E+02	1.19E-02		
Ethylbenzene	16	1	0.2	0.03	0.92	0.1		2.14E-03			8.71E+03	1.17E+00		
Total Xylenes	1.7	1	0.2	0.03	0.9	2		1.14E-05			9.26E+02	6.21E-03		
Total Naphthalenes	12	1	0.2	0.13	0.89	0.02		9.91E-03			6.54E+03	5.40E+00		
n-Hexane	31	1	0.2	0.03	0.8	0.06		6.99E-03			1.69E+04	3.81E+00		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		5.45E-01	2.46E-04	5.36E-08	
Benzo(a)anthracene	0.004	1	0.2	0.13	0.89		0.73		3.86E-09	*for*	2.18E+00		2.10E-06	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	1.63E-01		1.58E-07	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	1.63E-01		1.58E-07	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		1.63E-01		1.58E-06	
Chrysene	0.007	1	0.2	0.13	0.89		0.073		6.75E-10		3.81E+00		3.68E-07	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		1.63E-01		6.30E-07	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		1.63E-01		1.58E-07	
Sum	**1360.489**							4.92E-01	1.84E-08		7.41E+05	2.68E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 1360.489
HI= 4.923E-01
Cancer RISK= 1.836E-08
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 740941.590
HI= 2.681E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB12-5.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0.944	1	0.2	0.03	0.8	5.7		2.2E-06			3.44E+03	8.16E-03		
AL_EC >6-8	7.22	1	0.2	0.03	0.8	5.7		1.7E-05			2.63E+04	6.24E-02		
AL_EC >8-10	13.8	1	0.2	0.03	0.8	0.03		6.22E-03			5.03E+04	2.27E+01		
AL_EC >10-12	5.9	1	0.2	0.03	0.8	0.03		2.66E-03			2.15E+04	9.69E+00		
AL_EC >12-16	26	1	0.2	0.1	0.5	0.03		1.56E-02			9.47E+04	5.68E+01		
AL_EC >16-21	23	1	0.2	0.1	0.5	2		2.07E-04			8.38E+04	7.54E-01		
AL_EC >21-34	2.6	1	0.2	0.1	0.5	2		2.34E-05			9.47E+03	8.52E-02		
AR_EC >8-10	8.368	1	0.2	0.03	0.8	0.05		2.26E-03			3.05E+04	8.25E+00		
AR_EC >10-12	0.499	1	0.2	0.03	0.8	0.05		1.35E-04			1.82E+03	4.92E-01		
AR_EC >12-16	1.9	1	0.2	0.1	0.5	0.05		6.84E-04			6.92E+03	2.49E+00		
AR_EC >16-21	5.89925	1	0.2	0.1	0.5	0.03		3.54E-03			2.15E+04	1.29E+01		
AR_EC >21-34	1.1997	1	0.2	0.1	0.5	0.03		7.20E-04			4.37E+03	2.62E+00		
Benzene	0.0005	1	0.2	0.0005	0.95	0.003	0.055	2.09E-06	2.75E-11		1.82E+00	7.60E-03	1.00E-07	
Toluene	0.0631	1	0.2	0.03	1	0.2		4.20E-06			2.30E+02	1.53E-02		
Ethylbenzene	0.001	1	0.2	0.03	0.92	0.1		1.34E-07			3.64E+00	4.88E-04		
Total Xylenes	0.001	1	0.2	0.03	0.9	2		6.71E-09			3.64E+00	2.44E-05		
Total Naphthalenes	0.001	1	0.2	0.13	0.89	0.02		8.26E-07			3.64E+00	3.01E-03		
n-Hexane	0.056	1	0.2	0.03	0.8	0.06		1.26E-05			2.04E+02	4.60E-02		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		3.64E+00	1.64E-03	3.59E-07	
Benzo(a)anthracene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*for*	5.46E-01		5.27E-07	*for*
Benzo(b)fluoranthene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*all*	5.46E-01		5.27E-07	*all*
Benzo(k)fluoranthene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*cPAHs*	5.46E-01		5.27E-07	*cPAHs*
Benzo(a)pyrene	0.00015	1	0.2	0.13	0.89		7.3		1.45E-09		5.46E-01		5.27E-06	
Chrysene	0.00015	1	0.2	0.13	0.89		0.073		1.45E-11		5.46E-01		5.27E-08	Fail
Dibenzo(a,h)anthracene	0.00015	1	0.2	0.13	0.89		2.92		5.79E-10		5.46E-01		2.11E-06	
Indeno(1,2,3-cd)pyrene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10		5.46E-01		5.27E-07	
Sum	**97.4546**							3.21E-02	2.74E-09		3.55E+05	1.17E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 97.455
HI= 3.210E-02
Cancer RISK= 2.745E-09
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 355040.657
HI= 1.169E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB14-5.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	1.57	1	0.2	0.03	0.8	5.7		3.7E-06			6.65E+02	1.58E-03		
AL_EC >6-8	101	1	0.2	0.03	0.8	5.7		2.4E-04			4.28E+04	1.02E-01		
AL_EC >8-10	94.4	1	0.2	0.03	0.8	0.03		4.26E-02			4.00E+04	1.80E+01		
AL_EC >10-12	44	1	0.2	0.03	0.8	0.03		1.98E-02			1.86E+04	8.40E+00		
AL_EC >12-16	150	1	0.2	0.1	0.5	0.03		9.00E-02			6.35E+04	3.81E+01		
AL_EC >16-21	150	1	0.2	0.1	0.5	2		1.35E-03			6.35E+04	5.72E-01		
AL_EC >21-34	23	1	0.2	0.1	0.5	2		2.07E-04			9.74E+03	8.76E-02		
AR_EC >8-10	115.44	1	0.2	0.03	0.8	0.05		3.12E-02			4.89E+04	1.32E+01		
AR_EC >10-12	2.4	1	0.2	0.03	0.8	0.05		6.50E-04			1.02E+03	2.75E-01		
AR_EC >12-16	16	1	0.2	0.1	0.5	0.05		5.76E-03			6.77E+03	2.44E+00		
AR_EC >16-21	46.9821	1	0.2	0.1	0.5	0.03		2.82E-02			1.99E+04	1.19E+01		
AR_EC >21-34	8.5994	1	0.2	0.1	0.5	0.03		5.16E-03			3.64E+03	2.18E+00		
Benzene	0.245	1	0.2	0.0005	0.95	0.003	0.055	1.02E-03	1.35E-08		1.04E+02	4.33E-01	5.71E-06	Fail
Toluene	0.483	1	0.2	0.03	1	0.2		3.22E-05			2.04E+02	1.36E-02		
Ethylbenzene	5.46	1	0.2	0.03	0.92	0.1		7.31E-04			2.31E+03	3.10E-01		
Total Xylenes	12.1	1	0.2	0.03	0.9	2		8.12E-05			5.12E+03	3.44E-02		
Total Naphthalenes	2.7	1	0.2	0.13	0.89	0.02		2.23E-03			1.14E+03	9.44E-01		
n-Hexane	1.5	1	0.2	0.03	0.8	0.06		3.38E-04			6.35E+02	1.43E-01		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		4.23E-01	1.91E-04	4.17E-08	
Benzo(a)anthracene	0.004	1	0.2	0.13	0.89		0.73		3.86E-09	*for*	1.69E+00		1.63E-06	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	1.27E-01		1.23E-07	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	1.27E-01		1.23E-07	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		1.27E-01		1.23E-06	
Chrysene	0.013	1	0.2	0.13	0.89		0.073		1.25E-09		5.50E+00		5.31E-07	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		1.27E-01		4.90E-07	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		1.27E-01		1.23E-07	
Sum	**775.899**							2.30E-01	2.36E-08		3.28E+05	9.72E+01	1.00E-05	Fail

Current Condition

TPH, mg/kg= 775.899
HI= 2.297E-01
Cancer RISK= 2.362E-08
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 328481.441
HI= 9.723E+01
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB16-8

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	1.81	1	0.2	0.03	0.8	5.7		4.3E-06			7.51E+02	1.78E-03		
AL_EC >6-8	32.9	1	0.2	0.03	0.8	5.7		7.8E-05			1.36E+04	3.24E-02		
AL_EC >8-10	18.8	1	0.2	0.03	0.8	0.03		8.48E-03			7.80E+03	3.52E+00		
AL_EC >10-12	29	1	0.2	0.03	0.8	0.03		1.31E-02			1.20E+04	5.42E+00		
AL_EC >12-16	140	1	0.2	0.1	0.5	0.03		8.40E-02			5.81E+04	3.48E+01		
AL_EC >16-21	140	1	0.2	0.1	0.5	2		1.26E-03			5.81E+04	5.23E-01		
AL_EC >21-34	19	1	0.2	0.1	0.5	2		1.71E-04			7.88E+03	7.09E-02		
AR_EC >8-10	13.795	1	0.2	0.03	0.8	0.05		3.73E-03			5.72E+03	1.55E+00		
AR_EC >10-12	1.93	1	0.2	0.03	0.8	0.05		5.22E-04			8.00E+02	2.17E-01		
AR_EC >12-16	13	1	0.2	0.1	0.5	0.05		4.68E-03			5.39E+03	1.94E+00		
AR_EC >16-21	39.9985	1	0.2	0.1	0.5	0.03		2.40E-02			1.66E+04	9.95E+00		
AR_EC >21-34	6.9994	1	0.2	0.1	0.5	0.03		4.20E-03			2.90E+03	1.74E+00		
Benzene	0.341	1	0.2	0.0005	0.95	0.003	0.055	1.42E-03	1.88E-08		1.41E+02	5.90E-01	7.79E-06	Fail
Toluene	0.129	1	0.2	0.03	1	0.2		8.59E-06			5.35E+01	3.56E-03		
Ethylbenzene	1.16	1	0.2	0.03	0.92	0.1		1.55E-04			4.81E+02	6.44E-02		
Total Xylenes	0.645	1	0.2	0.03	0.9	2		4.33E-06			2.67E+02	1.79E-03		
Total Naphthalenes	0.17	1	0.2	0.13	0.89	0.02		1.40E-04			7.05E+01	5.82E-02		
n-Hexane	2	1	0.2	0.03	0.8	0.06		4.51E-04			8.29E+02	1.87E-01		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		4.15E-01	1.87E-04	4.09E-08	
Benzo(a)anthracene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*for*	1.24E-01		1.20E-07	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	1.24E-01		1.20E-07	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	1.24E-01		1.20E-07	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		1.24E-01		1.20E-06	
Chrysene	0.0003	1	0.2	0.13	0.89		0.073		2.89E-11		1.24E-01		1.20E-08	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		1.24E-01		4.80E-07	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		1.24E-01		1.20E-07	
Sum	**461.681**							1.46E-01	2.41E-08		1.91E+05	6.07E+01	1.00E-05	Fail

Current Condition

TPH, mg/kg= 461.681
HI= 1.464E-01
Cancer RISK= 2.411E-08
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 191466.263
HI= 6.071E+01
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB18-8

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	118	1	0.2	0.03	0.8	5.7		2.8E-04			8.38E+03	1.99E-02		
AL_EC >8-10	63.2	1	0.2	0.03	0.8	0.03		2.85E-02			4.49E+03	2.02E+00		
AL_EC >10-12	85	1	0.2	0.03	0.8	0.03		3.83E-02			6.04E+03	2.72E+00		
AL_EC >12-16	260	1	0.2	0.1	0.5	0.03		1.56E-01			1.85E+04	1.11E+01		
AL_EC >16-21	150	1	0.2	0.1	0.5	2		1.35E-03			1.07E+04	9.59E-02		
AL_EC >21-34	16	1	0.2	0.1	0.5	2		1.44E-04			1.14E+03	1.02E-02		
AR_EC >8-10	70	1	0.2	0.03	0.8	0.05		1.89E-02			4.97E+03	1.35E+00		
AR_EC >10-12	6	1	0.2	0.03	0.8	0.05		1.62E-03			4.26E+02	1.15E-01		
AR_EC >12-16	40	1	0.2	0.1	0.5	0.05		1.44E-02			2.84E+03	1.02E+00		
AR_EC >16-21	59.9985	1	0.2	0.1	0.5	0.03		3.60E-02			4.26E+03	2.56E+00		
AR_EC >21-34	8.0994	1	0.2	0.1	0.5	0.03		4.86E-03			5.75E+02	3.45E-01		
Benzene	2.46	1	0.2	0.0005	0.95	0.003	0.055	1.03E-02	1.35E-07		1.75E+02	7.29E-01	9.62E-06	Fail
Toluene	0.62	1	0.2	0.03	1	0.2		4.13E-05			4.40E+01	2.93E-03		
Ethylbenzene	14	1	0.2	0.03	0.92	0.1		1.88E-03			9.94E+02	1.33E-01		
Total Xylenes	18	1	0.2	0.03	0.9	2		1.21E-04			1.28E+03	8.58E-03		
Total Naphthalenes	5	1	0.2	0.13	0.89	0.02		4.13E-03			3.55E+02	2.93E-01		
n-Hexane	17	1	0.2	0.03	0.8	0.06		3.83E-03			1.21E+03	2.72E-01		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		7.10E-02	3.20E-05	7.00E-09	
Benzo(a)anthracene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*for*	2.13E-02		2.06E-08	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	2.13E-02		2.06E-08	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	2.13E-02		2.06E-08	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		2.13E-02		2.06E-07	
Chrysene	0.0003	1	0.2	0.13	0.89		0.073		2.89E-11		2.13E-02		2.06E-09	
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		2.13E-02		8.22E-08	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		2.13E-02		2.06E-08	
Sum	**933.381**							3.21E-01	1.41E-07		6.63E+04	2.28E+01	1.00E-05	Fail

Current Condition

TPH, mg/kg= 933.381
HI= 3.207E-01
Cancer RISK= 1.408E-07
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 66294.624
HI= 2.278E+01
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB20-4.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	139	1	0.2	0.03	0.8	5.7		3.3E-04			1.31E+05	3.10E-01		
AL_EC >8-10	104	1	0.2	0.03	0.8	0.03		4.69E-02			9.77E+04	4.41E+01		
AL_EC >10-12	140	1	0.2	0.03	0.8	0.03		6.31E-02			1.32E+05	5.93E+01		
AL_EC >12-16	380	1	0.2	0.1	0.5	0.03		2.28E-01			3.57E+05	2.14E+02		
AL_EC >16-21	300	1	0.2	0.1	0.5	2		2.70E-03			2.82E+05	2.54E+00		
AL_EC >21-34	28	1	0.2	0.1	0.5	2		2.52E-04			2.63E+04	2.37E-01		
AR_EC >8-10	66.309	1	0.2	0.03	0.8	0.05		1.79E-02			6.23E+04	1.69E+01		
AR_EC >10-12	10.5	1	0.2	0.03	0.8	0.05		2.84E-03			9.87E+03	2.67E+00		
AR_EC >12-16	68	1	0.2	0.1	0.5	0.05		2.45E-02			6.39E+04	2.30E+01		
AR_EC >16-21	92.9861	1	0.2	0.1	0.5	0.03		5.58E-02			8.74E+04	5.24E+01		
AR_EC >21-34	9.5994	1	0.2	0.1	0.5	0.03		5.76E-03			9.02E+03	5.41E+00		
Benzene	0.0005	1	0.2	0.0005	0.95	0.003	0.055	2.09E-06	2.75E-11		4.70E-01	1.96E-03	2.59E-08	
Toluene	0.539	1	0.2	0.03	1	0.2		3.59E-05			5.07E+02	3.38E-02		
Ethylbenzene	12	1	0.2	0.03	0.92	0.1		1.61E-03			1.13E+04	1.51E+00		
Total Xylenes	0.891	1	0.2	0.03	0.9	2		5.98E-06			8.37E+02	5.62E-03		
Total Naphthalenes	9.5	1	0.2	0.13	0.89	0.02		7.85E-03			8.93E+03	7.37E+00		
n-Hexane	15	1	0.2	0.03	0.8	0.06		3.38E-03			1.41E+04	3.18E+00		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		9.40E-01	4.24E-04	9.26E-08	
Benzo(a)anthracene	0.005	1	0.2	0.13	0.89		0.73		4.82E-09	*for*	4.70E+00		4.53E-06	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	2.82E-01		2.72E-07	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	2.82E-01		2.72E-07	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		2.82E-01		2.72E-06	
Chrysene	0.008	1	0.2	0.13	0.89		0.073		7.72E-10		7.52E+00		7.25E-07	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		2.82E-01		1.09E-06	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		2.82E-01		2.72E-07	
Sum	**1376.3405**							4.61E-01	1.06E-08		1.29E+06	4.33E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 1376.341
HI= 4.610E-01
Cancer RISK= 1.064E-08
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 1293552.143
HI= 4.333E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB22-1

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0.987	1	0.2	0.03	0.8	5.7		2.3E-06			7.35E+02	1.74E-03		
AL_EC >6-8	15.7	1	0.2	0.03	0.8	5.7		3.7E-05			1.17E+04	2.78E-02		
AL_EC >8-10	40.5	1	0.2	0.03	0.8	0.03		1.83E-02			3.02E+04	1.36E+01		
AL_EC >10-12	340	1	0.2	0.03	0.8	0.03		1.53E-01			2.53E+05	1.14E+02		
AL_EC >12-16	730	1	0.2	0.1	0.5	0.03		4.38E-01			5.44E+05	3.26E+02		
AL_EC >16-21	190	1	0.2	0.1	0.5	2		1.71E-03			1.41E+05	1.27E+00		
AL_EC >21-34	34	1	0.2	0.1	0.5	2		3.06E-04			2.53E+04	2.28E-01		
AR_EC >8-10	31.697	1	0.2	0.03	0.8	0.05		8.58E-03			2.36E+04	6.39E+00		
AR_EC >10-12	18.8	1	0.2	0.03	0.8	0.05		5.09E-03			1.40E+04	3.79E+00		
AR_EC >12-16	71	1	0.2	0.1	0.5	0.05		2.56E-02			5.29E+04	1.90E+01		
AR_EC >16-21	54.9961	1	0.2	0.1	0.5	0.03		3.30E-02			4.09E+04	2.46E+01		
AR_EC >21-34	19.99925	1	0.2	0.1	0.5	0.03		1.20E-02			1.49E+04	8.93E+00		
Benzene	0.003	1	0.2	0.0005	0.95	0.003	0.055	1.25E-05	1.65E-10		2.23E+00	9.32E-03	1.23E-07	
Toluene	0.11	1	0.2	0.03	1	0.2		7.33E-06			8.19E+01	5.46E-03		
Ethylbenzene	0.485	1	0.2	0.03	0.92	0.1		6.50E-05			3.61E+02	4.84E-02		
Total Xylenes	0.318	1	0.2	0.03	0.9	2		2.13E-06			2.37E+02	1.59E-03		
Total Naphthalenes	0.2	1	0.2	0.13	0.89	0.02		1.65E-04			1.49E+02	1.23E-01		
n-Hexane	0.013	1	0.2	0.03	0.8	0.06		2.93E-06			9.68E+00	2.18E-03		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		7.45E-01	3.36E-04	7.33E-08	
Benzo(a)anthracene	0.0006	1	0.2	0.13	0.89		0.73		5.79E-10	*for*	4.47E-01		4.31E-07	*for*
Benzo(b)fluoranthene	0.001	1	0.2	0.13	0.89		0.73		9.65E-10	*all*	7.45E-01		7.18E-07	*all*
Benzo(k)fluoranthene	0.0004	1	0.2	0.13	0.89		0.73		3.86E-10	*cPAHs*	2.98E-01		2.87E-07	*cPAHs*
Benzo(a)pyrene	0.0009	1	0.2	0.13	0.89		7.3		8.68E-09		6.70E-01		6.46E-06	
Chrysene	0.001	1	0.2	0.13	0.89		0.073		9.65E-11		7.45E-01		7.18E-08	Fail
Dibenzo(a,h)anthracene	0.0006	1	0.2	0.13	0.89		2.92		2.32E-09		4.47E-01		1.72E-06	
Indeno(1,2,3-cd)pyrene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10		1.12E-01		1.08E-07	
Sum	**1548.814**							6.96E-01	1.34E-08		1.15E+06	5.18E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 1548.814
HI= 6.962E-01
Cancer RISK= 1.343E-08
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 1153225.928
HI= 5.183E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB23-4.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		ABI	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0.958	1	0.2	0.03	0.8	5.7		2.3E-06			9.09E+02	2.16E-03		
AL_EC >6-8	20.7	1	0.2	0.03	0.8	5.7		4.9E-05			1.96E+04	4.66E-02		
AL_EC >8-10	41.9	1	0.2	0.03	0.8	0.03		1.89E-02			3.97E+04	1.79E+01		
AL_EC >10-12	110	1	0.2	0.03	0.8	0.03		4.96E-02			1.04E+05	4.71E+01		
AL_EC >12-16	530	1	0.2	0.1	0.5	0.03		3.18E-01			5.03E+05	3.02E+02		
AL_EC >16-21	520	1	0.2	0.1	0.5	2		4.68E-03			4.93E+05	4.44E+00		
AL_EC >21-34	120	1	0.2	0.1	0.5	2		1.08E-03			1.14E+05	1.02E+00		
AR_EC >8-10	32.27	1	0.2	0.03	0.8	0.05		8.73E-03			3.06E+04	8.28E+00		
AR_EC >10-12	1.785	1	0.2	0.03	0.8	0.05		4.83E-04			1.69E+03	4.58E-01		
AR_EC >12-16	23	1	0.2	0.1	0.5	0.05		8.28E-03			2.18E+04	7.85E+00		
AR_EC >16-21	109.9871	1	0.2	0.1	0.5	0.03		6.60E-02			1.04E+05	6.26E+01		
AR_EC >21-34	31.9994	1	0.2	0.1	0.5	0.03		1.92E-02			3.03E+04	1.82E+01		
Benzene	0.0005	1	0.2	0.0005	0.95	0.003	0.055	2.09E-06	2.75E-11		4.74E-01	1.98E-03	2.61E-08	
Toluene	0.0861	1	0.2	0.03	1	0.2		5.74E-06			8.17E+01	5.44E-03		
Ethylbenzene	0.015	1	0.2	0.03	0.92	0.1		2.01E-06			1.42E+01	1.91E-03		
Total Xylenes	0.015	1	0.2	0.03	0.9	2		1.01E-07			1.42E+01	9.54E-05		
Total Naphthalenes	0.015	1	0.2	0.13	0.89	0.02		1.24E-05			1.42E+01	1.17E-02		
n-Hexane	0.042	1	0.2	0.03	0.8	0.06		9.47E-06			3.98E+01	8.98E-03		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		9.48E-01	4.28E-04	9.34E-08	
Benzo(a)anthracene	0.005	1	0.2	0.13	0.89		0.73		4.82E-09	*for*	4.74E+00		4.57E-06	*for*
Benzo(b)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*all*	2.85E-01		2.74E-07	*all*
Benzo(k)fluoranthene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10	*cPAHs*	2.85E-01		2.74E-07	*cPAHs*
Benzo(a)pyrene	0.0003	1	0.2	0.13	0.89		7.3		2.89E-09		2.85E-01		2.74E-06	
Chrysene	0.007	1	0.2	0.13	0.89		0.073		6.75E-10		6.64E+00		6.40E-07	Fail
Dibenzo(a,h)anthracene	0.0003	1	0.2	0.13	0.89		2.92		1.16E-09		2.85E-01		1.10E-06	
Indeno(1,2,3-cd)pyrene	0.0003	1	0.2	0.13	0.89		0.73		2.89E-10		2.85E-01		2.74E-07	
Sum	**1542.7876**							4.95E-01	1.05E-08		1.46E+06	4.70E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 1542.788
HI= 4.950E-01
Cancer RISK= 1.054E-08
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 1463252.586
HI= 4.695E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB24-4

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0.9995	1	0.2	0.03	0.8	5.7		2.4E-06			2.47E+02	5.86E-04		
AL_EC >6-8	1	1	0.2	0.03	0.8	5.7		2.4E-06			2.47E+02	5.86E-04		
AL_EC >8-10	2.66	1	0.2	0.03	0.8	0.03		1.20E-03			6.57E+02	2.96E-01		
AL_EC >10-12	5.9	1	0.2	0.03	0.8	0.03		2.66E-03			1.46E+03	6.57E-01		
AL_EC >12-16	35	1	0.2	0.1	0.5	0.03		2.10E-02			8.65E+03	5.19E+00		
AL_EC >16-21	39	1	0.2	0.1	0.5	2		3.51E-04			9.63E+03	8.67E-02		
AL_EC >21-34	8.9	1	0.2	0.1	0.5	2		8.01E-05			2.20E+03	1.98E-02		
AR_EC >8-10	3.309	1	0.2	0.03	0.8	0.05		8.95E-04			8.17E+02	2.21E-01		
AR_EC >10-12	0.4995	1	0.2	0.03	0.8	0.05		1.35E-04			1.23E+02	3.34E-02		
AR_EC >12-16	1.1	1	0.2	0.1	0.5	0.05		3.96E-04			2.72E+02	9.78E-02		
AR_EC >16-21	7.786	1	0.2	0.1	0.5	0.03		4.67E-03			1.92E+03	1.15E+00		
AR_EC >21-34	1.7985	1	0.2	0.1	0.5	0.03		1.08E-03			4.44E+02	2.67E-01		
Benzene	0.00025	1	0.2	0.0005	0.95	0.003	0.055	1.04E-06	1.38E-11		6.18E-02	2.58E-04	3.40E-09	
Toluene	0.0005	1	0.2	0.03	1	0.2		3.33E-08			1.24E-01	8.23E-06		
Ethylbenzene	0.0005	1	0.2	0.03	0.92	0.1		6.70E-08			1.24E-01	1.65E-05		
Total Xylenes	0.0005	1	0.2	0.03	0.9	2		3.35E-09			1.24E-01	8.29E-07		
Total Naphthalenes	0.0005	1	0.2	0.13	0.89	0.02		4.13E-07			1.24E-01	1.02E-04		
n-Hexane	0.0005	1	0.2	0.03	0.8	0.06		1.13E-07			1.24E-01	2.79E-05		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.0005	1	0.2	0.03	0.8	0.03	0.091	2.26E-07	4.93E-11		1.24E-01	5.57E-05	1.22E-08	
Benzo(a)anthracene	0.003	1	0.2	0.13	0.89		0.73		2.89E-09	*for*	7.41E-01		7.15E-07	*for*
Benzo(b)fluoranthene	0.003	1	0.2	0.13	0.89		0.73		2.89E-09	*all*	7.41E-01		7.15E-07	*all*
Benzo(k)fluoranthene	0.001	1	0.2	0.13	0.89		0.73		9.65E-10	*cPAHs*	2.47E-01		2.38E-07	*cPAHs*
Benzo(a)pyrene	0.003	1	0.2	0.13	0.89		7.3		2.89E-08		7.41E-01		7.15E-06	
Chrysene	0.004	1	0.2	0.13	0.89		0.073		3.86E-10		9.88E-01		9.53E-08	Fail
Dibenzo(a,h)anthracene	0.001	1	0.2	0.13	0.89		2.92		3.86E-09		2.47E-01		9.53E-07	
Indeno(1,2,3-cd)pyrene	0.0005	1	0.2	0.13	0.89		0.73		4.82E-10		1.24E-01		1.19E-07	
Sum	**107.97125**							3.25E-02	4.05E-08		2.67E+04	8.02E+00	1.00E-05	Fail

Current Condition

TPH, mg/kg= 107.971
HI= 3.248E-02
Cancer RISK= 4.048E-08
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 26673.332
HI= 8.023E+00
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB27-4.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0.996	1	0.2	0.03	0.8	5.7		2.4E-06			3.09E+03	7.35E-03		
AL_EC >6-8	1	1	0.2	0.03	0.8	5.7		2.4E-06			3.11E+03	7.38E-03		
AL_EC >8-10	1	1	0.2	0.03	0.8	0.03		4.51E-04			3.11E+03	1.40E+00		
AL_EC >10-12	1.5	1	0.2	0.03	0.8	0.03		6.77E-04			4.66E+03	2.10E+00		
AL_EC >12-16	5.6	1	0.2	0.1	0.5	0.03		3.36E-03			1.74E+04	1.04E+01		
AL_EC >16-21	6.2	1	0.2	0.1	0.5	2		5.58E-05			1.93E+04	1.73E-01		
AL_EC >21-34	2.3	1	0.2	0.1	0.5	2		2.07E-05			7.15E+03	6.43E-02		
AR_EC >8-10	0.9955	1	0.2	0.03	0.8	0.05		2.69E-04			3.09E+03	8.37E-01		
AR_EC >10-12	0.4995	1	0.2	0.03	0.8	0.05		1.35E-04			1.55E+03	4.20E-01		
AR_EC >12-16	0.5	1	0.2	0.1	0.5	0.05		1.80E-04			1.55E+03	5.59E-01		
AR_EC >16-21	1.89925	1	0.2	0.1	0.5	0.03		1.14E-03			5.90E+03	3.54E+00		
AR_EC >21-34	0.9997	1	0.2	0.1	0.5	0.03		6.00E-04			3.11E+03	1.86E+00		
Benzene	0.01	1	0.2	0.0005	0.95	0.003	0.055	4.17E-05	5.51E-10		3.11E+01	1.30E-01	1.71E-06	Fail
Toluene	0.001	1	0.2	0.03	1	0.2		6.66E-08			3.11E+00	2.07E-04		
Ethylbenzene	0.0005	1	0.2	0.03	0.92	0.1		6.70E-08			1.55E+00	2.08E-04		
Total Xylenes	0.004	1	0.2	0.03	0.9	2		2.68E-08			1.24E+01	8.34E-05		
Total Naphthalenes	0.0005	1	0.2	0.13	0.89	0.02		4.13E-07			1.55E+00	1.28E-03		
n-Hexane	0.004	1	0.2	0.03	0.8	0.06		9.02E-07			1.24E+01	2.80E-03		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.0005	1	0.2	0.03	0.8	0.03	0.091	2.26E-07	4.93E-11		1.55E+00	7.01E-04	1.53E-07	
Benzo(a)anthracene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*for*	4.66E-01		4.50E-07	*for*
Benzo(b)fluoranthene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*all*	4.66E-01		4.50E-07	*all*
Benzo(k)fluoranthene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*cPAHs*	4.66E-01		4.50E-07	*cPAHs*
Benzo(a)pyrene	0.00015	1	0.2	0.13	0.89		7.3		1.45E-09		4.66E-01		4.50E-06	
Chrysene	0.00015	1	0.2	0.13	0.89		0.073		1.45E-11		4.66E-01		4.50E-08	Fail
Dibenzo(a,h)anthracene	0.00015	1	0.2	0.13	0.89		2.92		5.79E-10		4.66E-01		1.80E-06	
Indeno(1,2,3-cd)pyrene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10		4.66E-01		4.50E-07	
Sum	**23.5115**							6.94E-03	3.22E-09		7.30E+04	2.15E+01	1.00E-05	Fail

Current Condition

TPH, mg/kg= 23.512
HI= 6.936E-03
Cancer RISK= 3.219E-09
Pass or Fail? Pass

Adjusted Condition

TPH, mg/kg= 73045.735
HI= 2.155E+01
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB38-2.5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0.973	1	0.2	0.03	0.8	5.7		2.3E-06			3.54E+03	8.41E-03		
AL_EC >6-8	2.84	1	0.2	0.03	0.8	5.7		6.7E-06			1.03E+04	2.46E-02		
AL_EC >8-10	23.6	1	0.2	0.03	0.8	0.03		1.06E-02			8.60E+04	3.88E+01		
AL_EC >10-12	240	1	0.2	0.03	0.8	0.03		1.08E-01			8.74E+05	3.94E+02		
AL_EC >12-16	870	1	0.2	0.1	0.5	0.03		5.22E-01			3.17E+06	1.90E+03		
AL_EC >16-21	580	1	0.2	0.1	0.5	2		5.22E-03			2.11E+06	1.90E+01		
AL_EC >21-34	84	1	0.2	0.1	0.5	2		7.56E-04			3.06E+05	2.75E+00		
AR_EC >8-10	20.098	1	0.2	0.03	0.8	0.05		5.44E-03			7.32E+04	1.98E+01		
AR_EC >10-12	5.599	1	0.2	0.03	0.8	0.05		1.52E-03			2.04E+04	5.52E+00		
AR_EC >12-16	74	1	0.2	0.1	0.5	0.05		2.66E-02			2.70E+05	9.71E+01		
AR_EC >16-21	179.99925	1	0.2	0.1	0.5	0.03		1.08E-01			6.56E+05	3.93E+02		
AR_EC >21-34	29.9997	1	0.2	0.1	0.5	0.03		1.80E-02			1.09E+05	6.56E+01		
Benzene	0.0005	1	0.2	0.0005	0.95	0.003	0.055	2.09E-06	2.75E-11		1.82E+00	7.60E-03	1.00E-07	
Toluene	0.001	1	0.2	0.03	1	0.2		6.66E-08			3.64E+00	2.43E-04		
Ethylbenzene	0.001	1	0.2	0.03	0.92	0.1		1.34E-07			3.64E+00	4.88E-04		
Total Xylenes	0.001	1	0.2	0.03	0.9	2		6.71E-09			3.64E+00	2.44E-05		
Total Naphthalenes	0.001	1	0.2	0.13	0.89	0.02		8.26E-07			3.64E+00	3.01E-03		
n-Hexane	0.027	1	0.2	0.03	0.8	0.06		6.09E-06			9.84E+01	2.22E-02		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		3.64E+00	1.64E-03	3.59E-07	
Benzo(a)anthracene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*for*	5.46E-01		5.27E-07	*for*
Benzo(b)fluoranthene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*all*	5.46E-01		5.27E-07	*all*
Benzo(k)fluoranthene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10	*cPAHs*	5.46E-01		5.27E-07	*cPAHs*
Benzo(a)pyrene	0.00015	1	0.2	0.13	0.89		7.3		1.45E-09		5.46E-01		5.27E-06	
Chrysene	0.00015	1	0.2	0.13	0.89		0.073		1.45E-11		5.46E-01		5.27E-08	Fail
Dibenzo(a,h)anthracene	0.00015	1	0.2	0.13	0.89		2.92		5.79E-10		5.46E-01		2.11E-06	
Indeno(1,2,3-cd)pyrene	0.00015	1	0.2	0.13	0.89		0.73		1.45E-10		5.46E-01		5.27E-07	
Sum	**2111.1425**							8.06E-01	2.74E-09		7.69E+06	2.94E+03	1.00E-05	Fail

Current Condition

TPH, mg/kg= 2111.143
HI= 8.065E-01
Cancer RISK= 2.745E-09
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 7691185.650
HI= 2.938E+03
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr

Worksheet for Calculating Soil Cleanup Level for Soil Direct Contact pathway: Method B-Unrestricted Land use (Refer to WAC 173-340-740)

Date: 3/27/2006
Site Name: 302095 Morton
Sample Name: SB39-5

a. "TPH Test" button below is for testing adjusted condition at a specified TPH concentration.
b. Check columns at left for Pass/Fail detail.

Chemical of Concern or EC Group	Measured Soil Conc dry basis	Exposure Parameters				Toxicity Parameters		Current Condition			Adjusted Condition			
		AB1	AF	ABS_d	GI	RfD_o	CPF_o	HQ	RISK	Pass or Fail?	Soil Conc being tested	HQ	RISK	Pass or Fail?
	mg/kg	unitless	mg/cm^2-day	unitless	unitless	mg/kg-day	kg-day/mg	unitless	unitless		mg/kg	unitless	unitless	
Petroleum EC Fraction														
AL_EC >5-6	0	1	0.2	0.03	0.8	5.7					0.00E+00			
AL_EC >6-8	36.6	1	0.2	0.03	0.8	5.7		8.7E-05			8.24E+03	1.96E-02		
AL_EC >8-10	46.2	1	0.2	0.03	0.8	0.03		2.08E-02			1.04E+04	4.69E+00		
AL_EC >10-12	200	1	0.2	0.03	0.8	0.03		9.02E-02			4.50E+04	2.03E+01		
AL_EC >12-16	510	1	0.2	0.1	0.5	0.03		3.06E-01			1.15E+05	6.89E+01		
AL_EC >16-21	270	1	0.2	0.1	0.5	2		2.43E-03			6.08E+04	5.47E-01		
AL_EC >21-34	32	1	0.2	0.1	0.5	2		2.88E-04			7.20E+03	6.48E-02		
AR_EC >8-10	34.87	1	0.2	0.03	0.8	0.05		9.44E-03			7.85E+03	2.12E+00		
AR_EC >10-12	16.6	1	0.2	0.03	0.8	0.05		4.49E-03			3.74E+03	1.01E+00		
AR_EC >12-16	89	1	0.2	0.1	0.5	0.05		3.20E-02			2.00E+04	7.21E+00		
AR_EC >16-21	129.969	1	0.2	0.1	0.5	0.03		7.80E-02			2.93E+04	1.76E+01		
AR_EC >21-34	19.9984	1	0.2	0.1	0.5	0.03		1.20E-02			4.50E+03	2.70E+00		
Benzene	0.071	1	0.2	0.0005	0.95	0.003	0.055	2.96E-04	3.91E-09		1.60E+01	6.67E-02	8.80E-07	
Toluene	0.154	1	0.2	0.03	1	0.2		1.03E-05			3.47E+01	2.31E-03		
Ethylbenzene	0.48	1	0.2	0.03	0.92	0.1		6.43E-05			1.08E+02	1.45E-02		
Total Xylenes	0.45	1	0.2	0.03	0.9	2		3.02E-06			1.01E+02	6.80E-04		
Total Naphthalenes	0.4	1	0.2	0.13	0.89	0.02		3.30E-04			9.00E+01	7.44E-02		
n-Hexane	6.9	1	0.2	0.03	0.8	0.06		1.56E-03			1.55E+03	3.50E-01		
MTBE	0										0.00E+00			
Ethylene Dibromide (EDB)	0	1	0.2	0.03	0.8	0.000057	85		0.00E+00		0.00E+00	0.00E+00	0.00E+00	
1,2 Dichloroethane (EDC)	0.001	1	0.2	0.03	0.8	0.03	0.091	4.51E-07	9.85E-11		2.25E-01	1.02E-04	2.22E-08	
Benzo(a)anthracene	0.008	1	0.2	0.13	0.89		0.73		7.72E-09	*for*	1.80E+00		1.74E-06	*for*
Benzo(b)fluoranthene	0.006	1	0.2	0.13	0.89		0.73		5.79E-09	*all*	1.35E+00		1.30E-06	*all*
Benzo(k)fluoranthene	0.002	1	0.2	0.13	0.89		0.73		1.93E-09	*cPAHs*	4.50E-01		4.34E-07	*cPAHs*
Benzo(a)pyrene	0.002	1	0.2	0.13	0.89		7.3		1.93E-08		4.50E-01		4.34E-06	
Chrysene	0.013	1	0.2	0.13	0.89		0.073		1.25E-09		2.93E+00		2.82E-07	Fail
Dibenzo(a,h)anthracene	0.001	1	0.2	0.13	0.89		2.92		3.86E-09		2.25E-01		8.69E-07	
Indeno(1,2,3-cd)pyrene	0.0006	1	0.2	0.13	0.89		0.73		5.79E-10		1.35E-01		1.30E-07	
Sum	**1393.726**							5.58E-01	4.44E-08		3.14E+05	1.26E+02	1.00E-05	Fail

Current Condition

TPH, mg/kg= 1393.726
HI= 5.581E-01
Cancer RISK= 4.442E-08
Pass or Fail? Pass

Check Residual Saturation (WAC340-747(10))

Adjusted Condition

TPH, mg/kg= 313731.890
HI= 1.256E+02
Cancer RISK= 1.000E-05
Pass or Fail? Fail

Exposure Parameters		
for Non-carcinogens		Units
Average Body Weight, ABW	16	kg
Averaging Time, AT	6	yr
Exposure Frequency, EF	1	unitless
Exposure Duration, ED	6	yr
Soil Ingestion Rate, SIR	200	mg/day
Dermal Surface Area, SA	2200	cm^2
for Carcinogens		
Averaging time, AT_C	75	yr